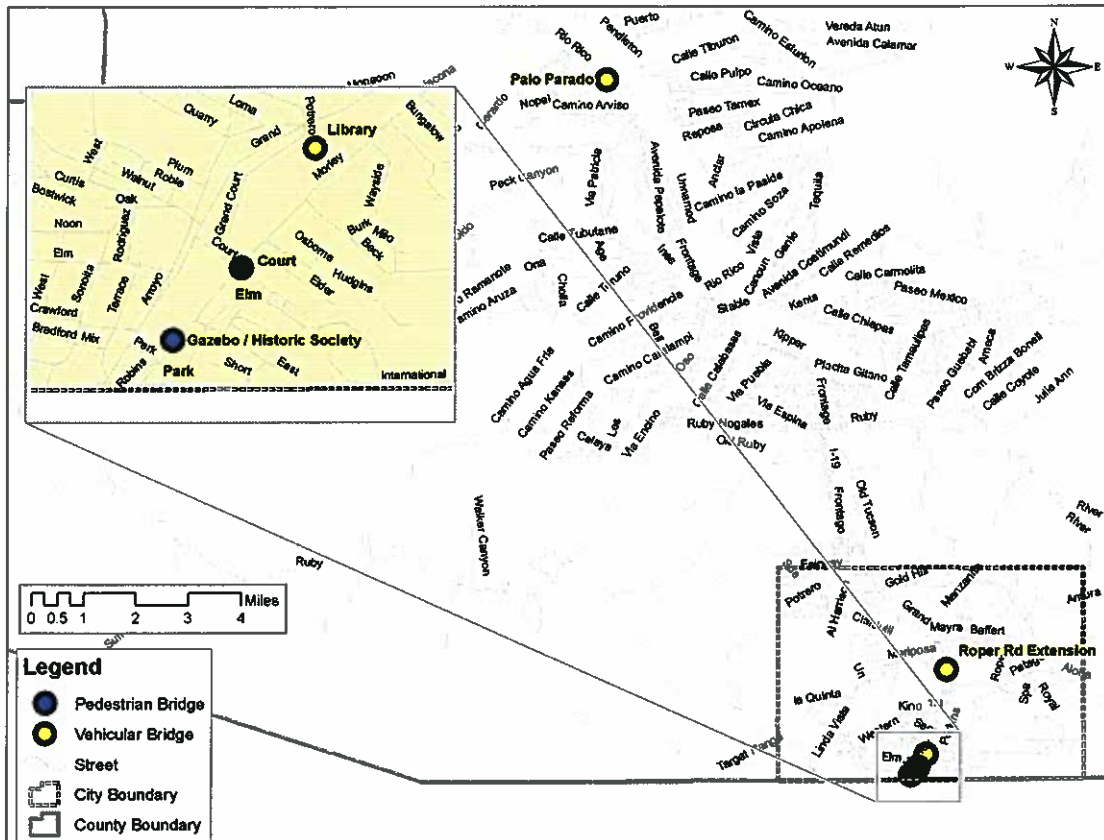


## 8. SUMMARY OF FINDINGS

During the development of the project scope, Key findings of the project can be summarized as follows. A map summarizing the feasible bridge locations is provided in **Figure 8-1**.



**Figure 8-1 – Feasible Bridge Locations**

### 8.1 Stage I Findings

The following locations were found to be feasible to locate a pedestrian bridge over the Union Pacific Railroad tracks:

- A pedestrian bridge crossing between the Primeria Alta Historical Society and the Gazebo/ Karam Park area. Justification for this bridge is:
  - It serves high volumes of pedestrian traffic.
  - It serves two cultural points of interest.
  - It can serve as a gateway into the downtown area from the border.
  - It serves a planned transit route (the Purple route), and it is within walking distance of the transfer facility at Terrace Avenue and Mix Street.
- A pedestrian bridge crossing immediately south of Court Street. Justification for this bridge is:
  - It serves high volumes of pedestrian traffic.
  - It serves the Historic Courthouse.

- It can serve as a gateway into the downtown area.
- It serves a planned transit route (the Purple route), and it is within walking distance of the transfer facility at Terrace Avenue and Mix Street

## 8.2 Stage II Findings

The following locations were found to be feasible to locate a vehicular bridge over the Union Pacific Railroad tracks among the three City of Nogales vehicular bridge locations:

- A vehicular bridge crossing near the Nogales Public Library. Justification for this bridge is:
  - It will provide greater vehicle access between Grand Avenue and Morley Avenue.
  - It will provide additional emergency access across the railroad.
  - Based on initial schematics, it appears to be feasible to site the bridge at this location.
  - It will not impact the Public Library
  - It serves a planned transit route (the Purple Route), and it is within walking distance of the transfer facility at Terrace Avenue and Mix Street.
- A vehicular bridge crossing near the future extension of Roper Road. Justification for this bridge is:
  - The Roper Road connection maximizes topography by being at a higher elevation than White Park Drive.
  - The railroad bridge could be part of an East-West Interconnector, such as that shown in the Nogales Transportation Plan.
  - A grade-separated structure would be located midway between Mariposa Road and SR 82 crossing, maximizing spacing between major intersections.
  - Would serve increasing development in the Oasis Town Center area.
  - Forecast 2020 traffic is approximately 10,000 vehicles per day on the East-West Interconnector. More development anticipated in Oasis Town Center area and residential development planned east of Grand/Hohokam.

## 8.3 Stage III Findings

The following location was found to be feasible to locate a vehicular bridge from the two proposed Santa Cruz County vehicular bridge locations:

- A vehicular bridge crossing the Union Pacific railroad tracks at the extension of Palo Parado Road to Pendleton Drive. Justification for this bridge is:
  - It will provide a safer crossing of the railroad tracks. The current crossing does not meet design standards, and is not recognized by the railroad.
  - A grade-separated railroad crossing would serve increasing development in the Pendleton Road area.

## 8.4 Implementation Recommendations

It should be emphasized that this study reviewed the feasibility of sites as pedestrian or vehicular bridge locations. No detailed design concept or environmental analysis was conducted as a part of this study. Sites to be studied were identified prior to the start of the study, and review focused on these sites. It was beyond the scope of this work to identify other, more feasible sites beyond the sites initially identified. This section of the report discusses prioritization for further development of bridge sites for each of the three stages and briefly summarized the next steps for implementation.

#### ***8.4.1 Stage I- Pedestrian Bridge Implementation and Prioritization***

Two sites for pedestrian bridges were found to be feasible among the four Stage I sites: A pedestrian bridge crossing between the Primeria Alta Historical Society and the Gazebo / Karam Park area and a pedestrian bridge crossing immediately south of Court Street. There is funding currently available for one pedestrian bridge site. In assessing the prioritization for pedestrian bridge construction, there are the following considerations:

The pedestrian bridge spanning between the Primeria Alta Historical Society and the Gazebo/ Karam Park area is close to the border and the downtown area and will potentially attract the highest pedestrian volumes. There are a number of unknowns that will need to be investigated prior to construction, including the location of the Nogales Wash and utility locations. Approval will be needed by the Union Pacific Railroad for the pedestrian bridge plans. Right-of-way requirements will need to be determined during the design phase of work. Other considerations include possible environmental requirements, such as the need for further coordination with the State Historic Preservation Office.

The pedestrian bridge site immediately south of Court Street also has a number of advantages. It will link existing commercial areas to a planned retail area on Morley Avenue. One drawback to this alternative is the need for acquisition of right-of-way from the Union Pacific Railroad. If the City and the Union Pacific Railroad cannot come to an agreement regarding right-of-way, it may be necessary to acquire right-of-way further east of the railroad tracks.

Because of the uncertainty of acquiring right-of-way for the Court Street pedestrian bridge, and the higher pedestrian demand closer to the border, it is recommended that the pedestrian bridge between the Primeria Alta Historical Society and the Gazebo / Karam Park area be implemented first.

The decision to build one or more pedestrian bridge locations will be decided by the Nogales Mayor and Council. The estimated construction cost of the bridge between the Primeria Alta Historical Society and the Gazebo / Karam Park is \$1.2 million, which does not include development of preliminary or final design plans. It is likely that additional funding may be needed to construct the bridge.

#### ***8.4.2 Stage II Sites- Vehicular Bridge Implementation and Prioritization***

Two sites for vehicular bridges were found to be feasible among the three Stage II sites: a vehicular bridge crossing near the Nogales Public Library, and a vehicular bridge crossing near the future extension of Roper Road. Although the Roper Road site has a higher estimated construction cost (\$12 million versus \$7 million), it has the potential to carry a higher traffic volume and provide more regional connectivity, particularly if connections to I-19 and SR 82 are made. For this reason, the Roper Road vehicular bridge is recommended as the highest priority site for implementation among the Stage II sites that were assigned for review. Key steps for implementation include:

- Approval of this concept by Mayor and Council. Initial comments from the Mayor and City Council indicated that additional vehicular bridge sites should be evaluated (not part of this study) to better serve the Monte Carlo neighborhood.
- Obtaining funding for design concept development, preliminary and final design plans and construction. This project should be included in the Transportation Improvement Plan and Long-Range Plan for the region.
- Preparing Design Concept Report, preliminary plans and environmental analysis.
- Coordinating with the Union Pacific Railroad and Arizona Corporation Commission and obtaining approvals during all design phases.

- Preparing final design plans, specifications and estimates.
- Construction

#### ***8.4.3 Stage III - Vehicular Bridge Implementation and Prioritization***

One vehicular bridge crossing the Union Pacific railroad tracks at the extension of Palo Parado Road to Pendleton Drive was recommended as a feasible location. This site would be the priority for development of a design concept report, design plans, and construction. Some key implementation issues that will need to be investigated further include development of a funding source for the railroad bridge, approval process by the Union Pacific Railroad and Arizona Corporation Commission for the railroad crossing, and further identification of environmental and design issues.

Key steps for implementation include:

- Approval of this concept by Santa Cruz County Board of Supervisors.
- Obtaining funding for design concept development, preliminary and final design plans and construction. This project should be included in the Transportation Improvement Plan and Long-Range Plan for the region.
- Preparing Design Concept Report, preliminary plans and environmental analysis.
- Coordinating with the Union Pacific Railroad and Arizona Corporation Commission to obtain approval for the crossing and for the bridge design.
- Preparing final design plans, specifications and estimates.
- Construction